General Specification, Chassis (Standard)

Alternator

175 Amp Leece Neville, 12 Volt, High-Output. Output at idle is 139 amps @ 200°F

Axle & Suspension, Front

Axle: Hendrickson, 12,000 lbs. rating. Synthetic lubed bearings. Integrated designed axle with 50 degree turning angle. Hubcaps with window seal included.
Shock Absorbers: SACH, direct acting, 1.75 diameter bore double-action piston type with long life bonded bushings.
Springs: 4" x 60", Hendrickson "Softek" variable rate,tapered springs with Anti-Wear liner. Capacity is 5,000 lbs. each at the ground, maintenance free rubber bushings.

Axle & Suspension, Rear

Axle: Meritor, RS21145, 21,000 lbs. capacity single speed with 5.29 ratio. Synthetic lubed bearings.
Shock Absorbers: Direct acting, 1.75 diameter bore double-action piston type with long life bonded bushings, Monroe.
Springs: 3" x 52" semi-elliptic, progressive, variable rate, 15-leaf slipper springs, 10,500 lbs. capacity each at the ground. Maintenance free, rubber bushed radius leaf permits axle adjustment for dog tracking.

Batteries

Two 8D, 12V/225 AMP/2800 CCA @ 0° F. 4/0 gauge battery cables are included. Includes heavy duty battery compartment. Battery disconnect switch located in the battery compartment.

Braking System

Emergency/Parking. Internal expanding, transmission mounted, 9" diameter x 3" wide. Mechanical operation with hand control application at driver's left.
Service Brakes. Both front and rear systems have 15" diameter x 1.438" thick , "Meritor Quadraulic" Hydraulic brakes at all wheels, 70MM dual system 4 pistons per caliper, self adjusting design. Meritor ABS. Dustshields are included.

Bumpers

Front and rear bumpers are die-formed, 12" high with 90° flanges, top and bottom. Smooth front bumpers are one piece 1/4" thick steel plate. Rear bumpers is one piece 3/16" thick steel plate. Rear bumper has 14" wraparound at corners with double "A" frame bracing.

Controls

Electronic operated throttle, hydraulic brake pedal, hand applied parking brake with warning light, transmission selector, dimmer switch, instrument panel rheostat-controlled lighting, key-type starter switch.

Cooling System

Charge air and down-flow radiator mounted in tandem at vehicle front. A 24" dia. nylon cooling fan with nine (9) blades equipped with a "Fully-On" or "Fully-Off" electromagnetic fan clutch driven by polyvee fan belt with spring loaded tensioner; Fan controlled by Engine ECM.

Transmission fluid cooled by heat exchanger in lower radiator tank. 55/45 Long Life Coolant mix provides anti-freeze protection to -40° F. Gates Blue Stripe hose with constant torque clamps.

Drive Line

Spicer SPL series 70 with protective guard around shaft with lubed for life components. 3 ½" diameter shaft.

Engine

CAT C-7 190 HP @ 2200 RPM; 520 Ft.Lbs. @ 1440 RPM; 800 RPM Idle. Includes a fully "off" fully "on" electric fan clutch. Includes 1500W Internal engine block heater.

Exhaust

4" O.D. 16 Gauge aluminized steel tubing from engine turbo-charge to in line muffler. Stainless steel muffler with catalitic converter. 4" O.D. 16 gauge aluminized steel tailpipe. Wide band exhaust clamps used at all joints. Tailpipe exits through bumper, road side. Tailpipe is 0 to 1/2" beyond bumper.

Frame

Main Frame - Dual "C" channels, 10 1/8" high with 3" flanges made of 5/16" thick, 50,000 psi steel, Section Modulus = 13.24 in.cu. and RBM =662,000 in lbs per rail. All permanent fixtures on frame are attached with hi-tensile strength "Huck-Spin" fasteners with swaged lock nuts.

Fuel System

100 gallon capacity (available only with: 252 or 273 wheelbase) or 60 gallon capacity (available only with 189, 217, or 238 wheelbase) aluminized steel, safety tank mounted between frame rails behind rear axle. Includes a sender inspection plate and right hand fill opening with spring loaded locking door.

Primary fuel filter/water separator is Racor 490R30, rated @ 90 GPH, 30 Micron filter, with see-thru bowl and self-venting drain; filter head includes integral check valve on inlet side, 200 watt heater. Secondary fuel filter is mounted on engine and supplied by engine manufacturer.

Horn

Electrical dual with non-glare horn button emblem.

Backing safety horn variable db. A Variable db, backing safety horn activated whenever the bus is shifted into reverse. Sounds between 87 and 112 db automatically adjusting itself depending on the ambient noise level in the proximity of the alarm.

Instruments / Gauges

Gauges: Speedometer with English Major and Metric Minor; Seven Digit Odometer; Resettable Trip Odometer; Tachometer; Engine Hourmeter; Oil Pressure Gauge, Voltmeter; Fuel Level; Coolant Temperature Gauge; Digital Clock. Gauges have automatic self-test at power up, needles sweep while display indicates "TEST"; Rheostat for gauges and switch Dimmer. Ammeter gauge.

LED Telltale Warnings/indicators: Right and Left Directional (Green); High Beam Indicator (Blue); Service Brake Applied (Red); Park Brake Applied (Red); ABS Active (Amber); Stop Engine (Red); Service Engine Soon (Amber); Check Transmission (Red); Low Coolant Level (Amber).

Dash Mounted Switches: Headlights with Parking Light position; Incremental High Idle with Low Idle Return; Cruise Control, includes two dash switches, Cruise Control On/Off; Cruise Set/Resume.

Steering

Full power Ross TAS-55 integral unit with 20.4 to 1 ratio; with TRW Power Steering Pump.18" diameter, two-spoke, padded tilt telescoping steering column.

Tires

Michelin 11R 22.5 G tubeless XZE Highway Tread.

Tow Hooks

Two front and rear tow hooks are frame mounted.

Transmission

Allison 2500 PTS Series transmission, 5 Forward speeds- 1 reverse, "Transynd" fluid.

Wheels

Hub Piloted steel 10 stud disc wheels, single front, dual rear, 22.5 x 8.25 rims.

Wiring

Multiplex chassis wiring with LED readout in drivers dash area.

General Specification, Body (Standard)

Panels & Compartments

Driver's Access Panel. A 27" x 16" hinged door on exterior below driver's window providing access to electrical junctions, circuit breakers, and terminals for body. Includes a keyed locked latch.

Battery Compartment. Enclosed compartment 23.63"L x 24.00" D, has rolling tray. Includes two retaining pins with cable to secure the tray in a closed position. Hinged door with recessed locking "Paddle Handle" latch. Located on left side in first body section behind the driver.

Driver Storage. A small compartment (11X6.5) above windshield on right hand side. Driver storage compartment (6X8) behind switch panel on left. Glove compartment in center of driver dash, is equipped with door and latch.

Emergency Doors

Rear center emergency door with 37.7" wide x 52.5" high opening. Latching mechanism includes a single-point bar lock with inside handle and guard, and an outside 6" chrome-plated recessed handle. Door includes upper and lower tempered green tinted safety glass. Doors are identified as "EMERGENCY DOOR", 2" black letters, above the door, on the outside of the bus. Includes Emergency door arrows inside and outside 6" long x 3/4" wide black arrow on the emergency door near the handles to indicate direction of turn for opening. On the outside, arrow points up and approximately 45° inboard of door; inside, the arrow points up. Arrows are in addition to standard "OPERATING INSTRUCTIONS" decal. A DOT warning buzzer activated by movement of the door latching mechanism is included. A 5" black fire-block upholstery header pad is included. A telescopic prop support attached to the top inside of the emergency door to hold it open at approx. 95°. Slide-bolt security latch prevents door from being opened from the outside when engaged. Bolt is connected to an interlock assembly which prevents engine starting when door is locked. If the lock is activated after the engine is running, an audible alarm is sounded in the driver's area.

Entrance Doors

Outward Opening Door, Manual Operation. Two panels open outward and close to seal against outside edge of lower step. Includes laminated green tinted glass. Ball bearing suspended for ease of operation and wear resistance. A Manualock, (locking U.S. STD; non-locking CAN. STD) mechanism is built into the forward outward opening door assembly. This will disconnect the door from the manual control rod, and allow the door to be opened from the outside of the bus. The latch located in the front door panel and accessible from outside the bus is lockable with the LL25 key. A 4" black fire-block upholstery header pad is over the door opening inside the bus and a stainless steel assist rail at the rear of the stepwell. Manual over-center control with an automatic latching device built into the handle for holding the door closed. Driver manually disengages the latch as the door is opened. Pivot bearings are oil-impregnated bronze.

Electrical

Power Socket, Accessory With Cap. Provides 12 volt power socket for connecting electrical accessories such as cellular phones, CB radios, etc. Only one per vehicle.

Fans

6" fan mounted to wire molding, located in the upper left, above driver's window. 6" fan mounted to windshield header, center of body.

Floor

Aisle. 3/16" thick ribbed gray rubber in aisles and at entrance aisle area. Aluminum Aisle trim over joint in floor covering, full length of body

Under seats. 1/8" Smooth gray rubber. Cove molding at wall is galvanized steel.

Wheelhousing. Rear molded black smooth rubber. Galvanized steel wheelhouse trim.

Plywood. 5/8" AB Marine Grade, attached with screws.

Headroom

Full 74", over floor covering and 5/8" plywood floor, measured at center aisle.

Heater/Defroster

90,000 BTU front system with continuous defroster duct under windshield and driver window. 50K, RH, Front for stepwell de-icing auxiliary entrance door glass, de-fogging, and added body heat. Driver selects recirculating of fresh air into system as conditions require. System has washable filter.

Dual ball type heater cut-off valves isolate heater system from engine/radiator. Manual ball type water flow control valve on heater next to driver, for temperature control. Goodyear Hi-Miler heater hose with constant torque clamps at all joints. Includes all heater hoses and hose clamps within the body heater system.

Insulation

The roof, sides, front and rear (including corners and bows) are insulated with 1 ½" thick material providing an "R" Value of 5.75. Ceiling, front and rear bulkhead use fiberglass insulation and the side walls use mineral wool.

Lettering

3M Diamond Grade "SCHOOL BUS" 8" black vinyl letters on yellow reflective tape on roof caps, front and rear.

Lights

Back-Up: Two 5" clear right and left rear.

Clearance: Two amber front and two amber rear single. Switch operates clearance, cluster and side marker lights with shields.

Cluster: Three amber front and three red rear with shields

Daytime Running: Head lamps, tail, license plate, parking, clearance & marker lights activated when engine is running.

Directional: Two 4" plain amber fender mounted. Two 7" amber lights mounted on rear. Sealed shock mounted, side directional mounted at front belt line area.
Dome: 15 Candlepower. Two row equally spaced at center over aisle, two switch, front and rear, plus switch to control last two dome lights.
Driver's Dome Light: Activated with separate switch.
Headlights: Four rectangular, Halogen single-sealed beam.
Side Marker: Amber right and left intermediate side marker lights.
Stepwell: 14 Candlepower. Wired to operate with ID lights with entrance door open.
Stop and Tail: Two combination lights, 4" right and left rear license panel in combination with 7" stop and tail lights with clear red lens.
Warning System: Weldon 8 light sequential system with dual hoods.

Mirrors, Exterior

All exterior mirrors will be heated. Heat is controlled by an on/off switch.
Crossview: A Rosco "Mini-Hawkeye" crossview mirror system is provided to allow a seated driver to view pedestrians while the bus is stopped. The crossview mirror system is comprised of a 10.8" x 12.5" elliptical mirror with tinted upper portion to reduce glare supported by a center mounting post with ball stud mounted, on both LH and RH sides of the bus. The mirror mounting posts are attached to the front cowls, and feature a breakaway pivot to reduce damage in the event of accidental contact. The crossview mirror system allows for viewing all areas along the front and sides of the bus which are not visible by direct view.
Rearview: The Rosco "Avia" detent rearview mirror system is designed to provide a view of the roadway to the rear, as well as a view of the ground along both sides, RH and LH. The Rearview mirror system is comprised of a 74 sq. in. flat and a 38 sq. in. convex, 36" radius, on both RH an LH sides. The RH rearview mirrors are located so as to be visible through the wiped area of the windshield. The LH rearview mirrors are located so as to be visible through the driver's window. The rearview mirrors on both RH and LH sides feature a spring breakway indexed pivot and are adjustable without tools.

Mirrors, Interior

Rearview: 6" x 30" with 3/16" clear safety glass laminated to steel backing plate. Mirror has 1 3/4" radius rounded corners. Perimeter of mirror is edged with 5/8-diameter rubber padding. The interior rearview mirror is installed above the seated driver on the front upper inner panel, and is designed to provide a clear view of the interior of the vehicle and of the roadway to the rear.

Mud Flaps

Front flaps are standard. Rear mud flaps are 23 x 30"; both sides (without logo). Flaps extend to within 6" of ground level. Fenders are black rubber.

Paint

Exterior: National school bus yellow with black trim and black bumpers. OEM, heat cured, polyurethane.

Interior: Astro White, hot sprayed-on baked enamel, except aluminized inner side panels. Seat frames, heaters and trim are black. Switch console and dash, medium gray.

Rust Proofing: Body parts thoroughly rust-proofed after fabrication and before assembly.

Undercoat: Underside of body floor, skirt and wheelhousings thoroughly undercoated prior to body mount on chassis to ensure best coverage and maximum corrosion resistance. Undercoat material offers optimum corrosion protection.

Warning Light Background: A minimum area of 3" band of black background is painted around warning lights, front and rear.

Panels, Exterior

Outside side panels are constructed of 16-gauge smooth steel and include formed flutes for additional strength. Side panels extend from below the side windows to a distance of 16 ¼" below the floor (16 ¼" skirt). Rear corner panels are constructed of 20-gauge steel and include a license plate emboss, both right and left. The left hand emboss includes nylon nuts and slot-head screws for license plate mounting. The front roof cap is formed from 18-gauge steel. The rear roof cap is formed from 20-gauge steel. Roof sheets are constructed of 20-gauge steel and span the entire width of the bus (window header to window header). Roof sheets include an embossed rain visor over side windows. Front cowl panels are constructed of 11-gauge steel. Floor panels are constructed of 14-gauge steel and are reinforced with full width "U" channel cross members. All riveted floor joints are reinforced with full width 3⁄16" x 1 ½" x 2" structural steel angles and ⅛" flat bar.

Panels, Interior

A removable 18-gauge steel front upper inner panel is provided to allow access to the front roof cap area. A removable 20-gauge steel rear upper inner panel is provided to allow access to the rear roof cap area. Removable composite wire moldings, right and left, are provided to allow access to body wiring harnesses. Wire moldings are provided in sections. Textured aluminized fully hemmed steel inside side panels are provided, extending from the window sill down to the floor gusset seat ledge, for the entire length of the body on both left and right sides. Perforated acoustic headlining panels, spanning the entire width of the bus (window header to window header), are constructed of 22-gauge steel and are double-hemmed to provide additional joint strength.

Radio

AM/FM/PA/CD with 8 deluxe speaker system.

Reflectors

Standard reflectors include:

- Two 3" red mounted on side of body near rear.
- Two 3" red, mounted on rear of body.
- wo 3" amber right and left intermediate side reflectors.

Reflective Tape: One-inch minimum width strip surrounds each emergency exit, 1 3/4" wide rear structure, and 2" wide strip on each side of unit at approximately floor level. Front and rear roof cap, with Black 8""SCHOOL BUS" lettering.
Canada: 1" wide strip of yellow reflective vinyl on each side of the bus, above the passenger windows. Also provides vertical 1" strips of yellow reflective vinyl at both the rear bow and front corner post, both sides of the bus.

Rubrails

Four double-ribbed 16 gauge steel applied rubrails are installed along both sides of the body. The rubrails are installed as follows: One below side windows; one at seat (Passenger) level; one near the floor level; one at the bottom of the skirt. The window rail extends from the front bow on the RH or the Front cowl post on the LH to the rear corner radius. The seat rail extends from the front bow, both RH & LH around the rear corner to rear emergency door post. The floor rail extends from the front bow, both RH & LH, to the rear corner radius. The skirt rail extends from the front bow on the RH, or the front cowl post on the LH, to the rear bumper (interrupted at wheelhousing cut-outs). Bumper rubrail installed below rear emergency door, immediately above the rear bumper.

Safety Equipment

Three (3) reflectorized triangular road warning devices enclosed in a plastic storage container, secured to the floor in the driver's compartment area.

Seats

Driver's Seat. Bostrom Routemaster black vinyl with gray fabric insert, high back pedestal type with fore & aft travel and vertical adjustment. Seat belt is three-point, floor mounted anti-cinch emergency locking retractor. Adjustable pillar loop provides approximately 7 ½" vertical adjustment at the shoulder belt top mount. Driver's armrest to left of driver on rear portion of switch panel.
Passenger Seat Upholstery. All Passenger seats are optional and will be upholstered in fire-block vinyl, solid gray.

Stepwell

Three-step riser, National Std. 10" to 14" ground to lower step height. Stainless steel. Step treads with white abrasive stripe inserted and bonded into a recessed area. 3" white rubber wear plate with abrasive stripe is located at the floor level step of the entrance door.

Stop Arm

Specialty Solid State Electric operated High Intensity Reflective octagonal stop arm, red with a white board and 6" High lettering "STOP" on both sides. Includes red LED Cluster lights over and under the word "STOP" visible from both sides.

Sun Visor

Transparent dark green tint 6.5" x 30" smooth edge plastic. Located in front of driver. Adjustable vertically on two arms pivoted at ends of visor and at anchor points on windshield header.

Switch Panel

Mounted on left of driver with rocker-type illuminated switches for electrical equipment. Brightness of illumination is controlled by headlight switch rheostat.

Ventilation

Air Intake. Heater intake left front below windshield level provides up to 100% fresh air through heater.
Vent. Static non-closing type in front roof.

Windows

Auxiliary Saftey-View Vision Panel. Fresnel Broad Vision 7 1/2" Wide x 13 1/2" High
Driver's. Double sliding aluminum sash with security fastener for locking both sash, laminated green tinted safety glass.
Side. 9" split sash, tempered tinted glass in aluminum frame, provides 9" opening when lowered.
Rear Vision. Tinted tempered.

Windshield

The windshield consists of four separate pieces of flat shaded safety plate glass. To facilitate cleaning of the windshield from the outside, there are black grip handles mounted on side right and left cowl with fold-up step each side on right and left cowls.

Windshield Wipers

Electric, intermittent single switch, wet arm wipers. Bottom mounted with remote control, non-glare arms and blades. Electric windshield washer with hard plastic one gallon capacity reservoir located under engine hood, washer outlets mounted on wiper arms.

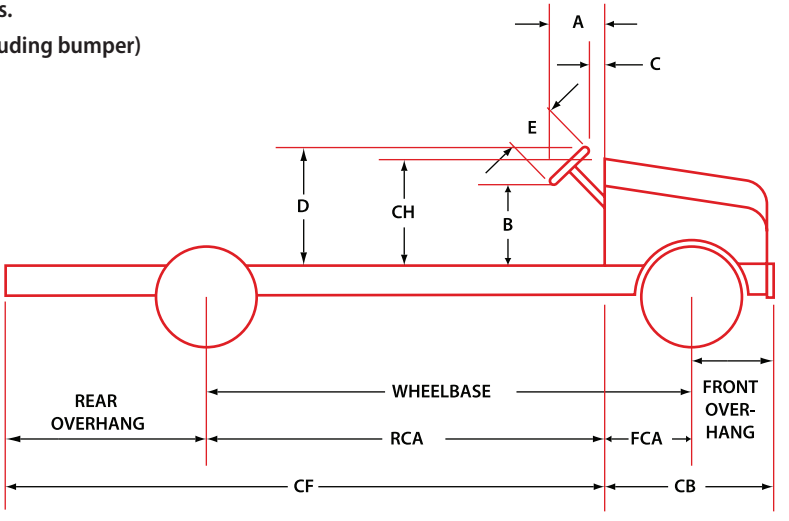
Wiring

Colored and continuously number coded in molding on top of side windows for access to harness without removing window. Body wiring protected by automatic resetting circuit breakers.

Dimensions

The dimensions shown exclude exterior mirrors, marker and signal lights, bumpers, fender skirts, washers, wipers, ad frames and rub rail; and are taken under static conditions at design height. Overall maximum height varies from 117″ to 118″ depending upon choice of tires, suspension system, and body model. Add 3″ for roof vents and 3″ for 77″ headroom. Rear bumper adds 1.25″ to overall body length. Front bumper adds 2″ to overall body length.

Length:	**289″- 471″**
Width:	**96″**
Interior Width:	**90 ¾″**
Height:	**120″- 124″**
Skirt Length:	**16 ¾″**
Wheelbase:	**189″ / 217″ / 238″ / 252″ / 273″**
Interior Headroom:	**74″- 77″**
Front Door:	**27″ wide, 78″ high**
Rear Emergency Door:	**52.5″ x 37.7″**
Wheel Cut:	**50°**
Tire Size:	**11R22.5 highway tread Michelin XZE**
GVWR:	**30,000 lbs.**
Front Overhang:	**36.5 (including bumper)**
FCA (Front Cowl to Axle):	**25″**
CB (Cowl to Bumper):	**64.5″**
CH (Cowl Height):	**33″**
A:	**21.17″**
B:	**26.75″**
C:	**9.5″**
D:	**41.97″**
E:	**18″**



Dimensions & Payload Weight (standard equipment)

WHEELBASE	BODY MODEL	CAPACITY	PAYLOAD	CURB WEIGHT	TOTAL WEIGHT	OVERALL LENGTH	REAR OVERHANG	TURN RADIUS	RCA	CF
189″	BBCV2311	48	5910	15,100	21,010	351	122.25	25.9′	164	286.25
217″	BBCV2610	54	6630	16,100	22,730	386	129.25	28.9′	192	321.25
238″	BBCV2807	60	7350	16,300	23,650	407	129.25	31.1′	213	342.25
252″	BBCV3011	66	8070	17,400	25,470	435	143.25	32.6′	227	370.25
273″	BBCV3303	72	8790	18,000	26,790	463	150.25	34.9′	248	405.25
273″	BBCV3310	78	9510	18,400	27,910	470	157.25	34.9′	248	405.25

Pupil weight @ 120 lb each. Driver @ 150 lb.
Approximate curb & total weights are based on standard equipment units. Optional equipment may significantly increase these estimated weights.

Fastener Grades

The following information defines chassis fastener grades to be used for the installation of various items on the Blue Bird chassis. The fastener grades shown are minimums, and the information applies to Blue Bird installed fasteners only. It does not apply to vendor supplied or installed fasteners, except where noted. Chassis fasteners not specified below must be grade 2 at a minimum. The grade of the hexnut used must be equal to the grade of the bolt to which it is assembled.

Grade 8 Category

- Alternator to brace, and alternator mounting bracket and brace to engine
- Air compressor to mounting bracket and mounting bracket to engine
- Power steering pump to engine
- Fan to fan pulley
- Steering gear to mounting frame rail
- Air pump to mounting bracket and mounting bracket to engine
- Idler pulley bracket to engine
- All suspension parts and hardware
- All frame structure cross members, outriggers and related hardware
- All bumper and tow hook/eye mounting hardware.

Grade 5 Category

- Transmission to engine
- Driveline yoke
- Driveline flange yoke to companion flange
- uel tank brackets and brace to frame hardware
- Starter to engine
- Alternator to mounting bracket

General Torque Procedure

Grade 8 and Grade 5 fasteners must be tightened to the recommended torque values listed in the Designated Fastener table below. When the washer is on the threaded (hex nut) side, hold the bolt head and tighten the hex nut while reading the torque. Observe the torque to ensure it is in the specified range. When there are washers on both sides of the bolt (capscrew), or it is assembled into a threaded hole, torque the bolt head to the specified value. Do not lubricate the components when applying torque.

Designated Fasteners Torque Chart (Plated Fasteners) U.S. Standards						
	SAE GRADE 2 (FT-LBS)		SAE GRADE 5 (FT-LBS)		SAE GRADE 8 (FT-LBS)	
SIZE	Min	Max	Min	Max	Min	Max
1/4"–20	3	4	5	6	8	9
1/4"–28	4	5	6	7	9	10
5/16"–18	7	8	12	13	16	18
5/16"–24	8	13	17	19	24	27
3/8"–16	13	15	17	19	24	27
3/8 "–24	15	17	23	26	33	37
7/16 "–14	21	24	33	37	46	52
7/16 "–20	24	27	37	41	52	58
1/2"–13	33	37	50	57	70	80
1/2 "–20	37	41	57	64	80	90
9/16"–12	47	53	73	82	101	115
9/16 "–18	53	59	82	91	115	129
5/8 "–11	63	73	106	112	138	159
5/8 "–18	73	83	112	128	159	180
3/4 "–10	116	129	177	200	250	282
3/4 "–16	129	144	200	223	282	315
7/8 "–9	112	125	289	322	407	454
7/8"–14	125	138	322	355	454	501
1"–8		188	437	483	618	682
1"–12	188	205	483	529	682	746
1"–14	205	210	529	541	746	764

Designated Metric Class 10.9		
	TORQUE (FT-LBS)	
SIZE	Min	Max
M4	2.6	2.9
M5	5	6
M6	9	10
M8	22	25
M10	53	58
M12	75	83
M14	1210	133
M16	176	196
M20	302	336
M24	598	664

Non Designated Fasteners Torque Chart (Plated Fasteners) U.S. Standards						
	SAE GRADE 2 (FT-LBS)		SAE GRADE 5 (FT-LBS)		SAE GRADE 8 (FT-LBS)	
SIZE	Min	Max	Min	Max	Min	Max
1/4"–20	2	4	4	6	6	9
1/4"–28	3	5	5	7	7	10
5/16"–18	6	8	9	13	12	18
5/16"–24	7	9	10	14	14	20
3/8"–16	10	15	16	23	23	33
3/8"–24	12	17	18	26	26	37
7/16"–14	17	24	25	37	46	52
7/16"–20	19	27	28	41	52	58
1/2"–13	25	37	40	57	70	80
1/2"–20	28	41	44	64	70	90
9/16"–12	47	53	73	82	101	115
9/16"–18	53	59	82	91	115	129
5/8"–11	63	73	106	112	138	159
5/8"–18	73	83	112	128	159	180
3/4"–10	116	129	177	200	250	282
3/4"–16	129	144	200	223	282	315
7/8"–9	112	125	289	322	407	454
7/8 "–14	125	138	322	355	454	501
1"–8		188	437	483	618	682
1"–12	188	205	483	529	682	746
1"–14	205	210	529	541	746	764

Non Designated Metric Class 10.9		
	TORQUE (FT-LBS)	
SIZE	Min	Max
M4	2.0	2.9
M5	4.2	6
M6	7	10
M8	17	25
M10	33	58
M12	58	83
M14	93	133
M16	137	196
M20	235	336
M24	465	664

Service Precautions

This section proscribes safe working practices which must be followed in order to minimize the risk of personal injury and/or damage to the vehicle. Additional Warnings and Cautions appear throughout this manual.

Also follow all warnings and cautions printed in the various manuals from component manufacturers, included in this manual as chapter Appendixes.

Whenever Working Under the Bus:

Never move under a bus supported only by a hydraulic jack. Use only proper jackstands or lifts. Always check lifting equipment thoroughly to verify proper working condition before each use. Ensure that the lifting equipment is rated for lifting the weight of the bus. Ensure that the surface under all jacks, stands, or lifts is hard, level, and secure enough to support the weight of the bus concentrated on the footprint of the jack. Chock all wheels to prevent rolling in either direction. Disconnect battery cables to ensure the vehicle cannot be started.

About Modifications:

School busses are built in conformance with several levels of stringent governmental regulations. Any user-performed modification of the bus may potentially result in a non-conformance. For this reason, it is Blue Bird's policy that end users should not perform any equipment modifications to the bus. Contact your Athorized Blue Bird Distributor for advice and consultation before adding any electrical accessories or non-standard mechanical equipment.

Whenever Working Around Moving Parts:

Use extreme caution to avoid accidental entaglement. Do not wear loose clothing. Remove all jewelry including watches and rings. Securely cover long hair. Wear eye, hearing, and respiratory protection.

Whenever Working Inside the Engine Compartment:

Disconnect batteries to prevent accidental engine starting. Exercise extreme caution around hot components, and wear sufficiently protective clothing. Whenever possible, allow components to cool completely before working. Be mindful of any system which operates under pressure, and ensure that pressure is released before working on that system.

When closed system components (such as those associated with the fuel system, cooling system, or charge air system) have been removed, always take appropriate measures to prevent contamination of the system by dust, dirt, or debris.

Replacing Fasteners

Do not re-use fasteners in high-torque locations. Replace with new fasteners of appropriate hardness grade.

Performing Structural Repairs:

Welding. Modern school buses are equipped with sensitive electronic equipment such as the multiplex system and the ECUs of engine, transmission, and ABS brakes. Such components can be permanently damaged by current fluctuations. In addition to the welding precautions you would normally take to isolate components which may be damaged by heat, the repair technician must also bear in mind the potential for expensive damage to electronic systems. It is highly recommended that the multiplex Main Bus Controller and other such electronic control units be disconnected before performing any welding anywhere on the body or chassis.

Whenever Rendering Roadside Assistance:

Take measures to ensure the safety of passengers first. Move passengers away from the disabled bus to a safe location in an organized fashion. Use the roadside emergency markers to clearly warn traffic of the hazard. Call for help and alternate passenger pick-up immediately. If at all possible, avoid performing service procedures roadside, and instead have the bus towed to a proper and safe service facility.

Hazardous Materials

Vehicle fluids, including engine coolant, transmission fluid, engine oil and power steering fluid, are hazardous to the environment and to the individual performing maintenance and repair on the vehicle.. The handling, storage, and disposal of these fluids are subject to government regulation. Read and strictly follow the warnings and instructions on the labels of all fluids and compounds.

The anti-freeze in engine coolant is Ethylene Glycol. This is a skin, eye and respiratory irritant, and is toxic to humans and animals.

Certain other materials, such as plastics, rubber compounds, solvents and paints, are also considered environmental hazards. Always exercise caution to protect your health and the environment when working with, or disposing of, any chemically active material or compound, including cleaning materials.

Protective Gear

Always wear proper eye protection and other required personal protective equipment to help prevent personal injury when performing vehicle maintenance, repair, or service. These include, but are not limited to:

- **Skin protection.** Long sleeves, appropriate gloves, an appropriate apron, etc.
- **Eye protection:** Safety glasses, a facemask, serviceable eye wash equipment, etc.
- **Respiratory protection:** A filter mask appropriate for the material being used, properly ventilated work area, emergency breathing aids, etc.
- **Hearing protection:** Earplugs, earmuffs, etc.

Jacking and Towing

Jack Points

Proper jacking procedures and basic safety measures must be observed to ensure the safety of personnel while working under the bus. Always check the serviceability of any lifting equipment prior to use. Ensure that the lifting device is of sufficient strength to handle the bus, and that the surface provides the necessary firmness to support the weight of the bus concentrated on the footprint of the jack. Never move under a bus supported only by a hydraulic jack.

1. Park the bus on a flat, level surface of sufficient firmness to support the jack.

2. Chock the wheels in both directions.

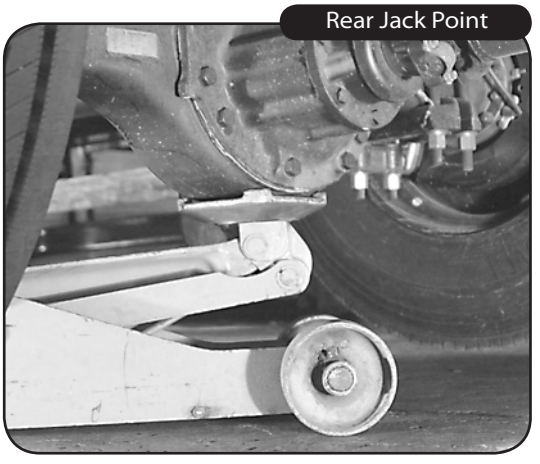
3. Use only jacks and jack stands of sufficient capacity to support the bus. Following the jack manufacturer's recommendations, place the jack securely under the axle at the spring or suspension beam, nearest the tire/wheel to be repaired.

4. Jack the bus only to the height necessary to service.

5. Support the bus with blocks or jack stands under the frame rails.

Front Jack Point

Rear Jack Point



Towing

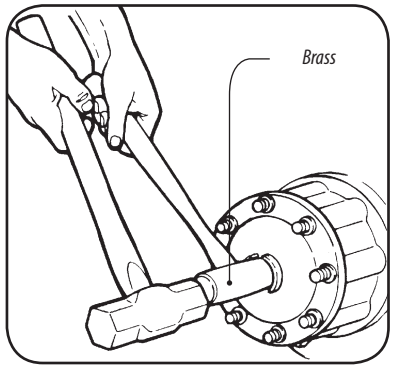
If the bus is towed with the rear wheels on the road, the driveshaft must be prevented from turning in order to avoid possible damage to the automatic transmission. This is accomplished by removing the rear axle shafts, and covering their openings with caps to prevent rear axle lubricant spillage.

Also, on Vision's equipped with air brakes, if full normal air pressure is not present in the air system, the spring brakes must be mechanically caged to prevent their engagement.

1. Apply the parking brake and chock the wheels while preparing the vehicle for towing.

2. Remove the stud nuts and washers from the center hub.

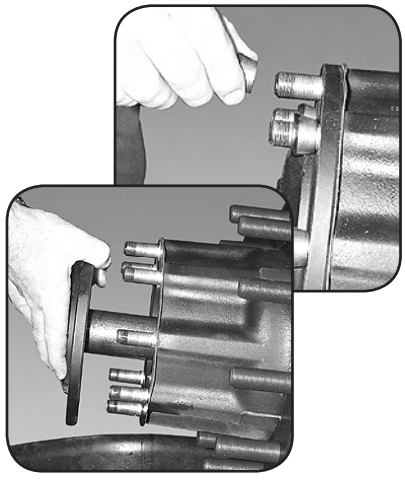
3. To loosen the tapered dowels which surround each stud, use a 1.5" diameter brass drift and 5-6 lb hammer. Hold the brass drift against the center of the axle shaft flange, inside the round driving lugs. Firmly striking the end of the brass drift with the hammer will dislodge the tapered dowels.



Do not use a chisel or wedge to loosen the axle shaft and tapered dowels. Doing so can damage the axle shaft, gasket, seal, or axle hub.

4. Mark the axle shaft so that it can easily be identified for reinstallation on the side of the axle from which it is removed. Carefully remove the axle shaft, taking measures to catch the axle lubricant which may spill. Install a cover plate over the open end of the hub to prevent dirt contamination and lubricant spillage during towing.

5. Repeat the above procedure to remove the other axle shaft.



6. If the bus is equipped with air brakes, and if full working air pressure is not present in the system, the spring brakes must be mechanically caged before the vehicle can be towed. Proceed as follows:

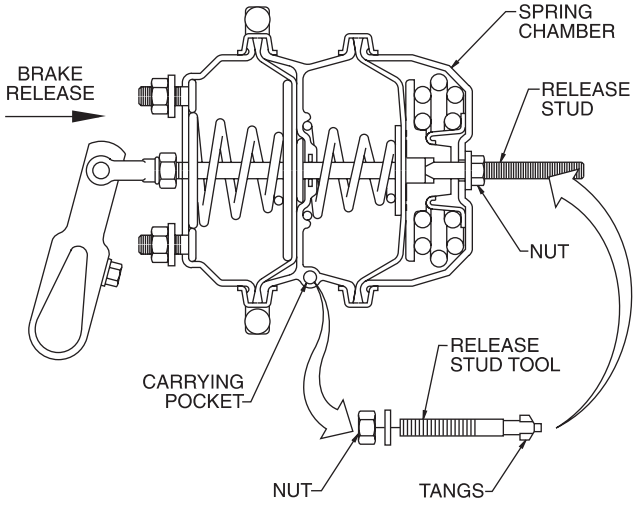
Caging the spring brakes disables the parking brake. Ensure that the bus is completely secured against rolling by wheel chocks before caging the spring brakes.

6.1 On each of the rear combination brake chambers, a special release stud tool is carried in a storage socket cast into the body of the chamber. Remove the nut and washer from the end of the release stud tool, and remove the tool from its socket.

6.2 Remove the rubber dust cap from the access hole in the upper end of the spring brake chamber. Insert the toggle end of the release stud tool into the access hole. Be sure that the tapered end of the tool has entered the hole in the piston inside the chamber. Insert the tool until it bottoms.

6.3 Rotate the release stud tool a quarter turn clockwise and pull outward, to engage the toggle end with the piston. While holding the bolt in its engaged position, install the washer and nut onto the end of the tool. Turn the nut down against the flat washer until finger tight.

6.4 Using a 3/4" hand wrench, (do not use an impact-type wrench), turn the release nut clockwise until the internal spring is fully caged.



6.5 Repeat the procedure for the spring brake chamber on the opposite side of the bus. The spring brakes are now released, having their springs compressed by the release bolts.

7. With the axle shafts removed and air spring brakes caged, the bus is prepared for towing. The Vision may be equipped with optional tow hooks, located just inside the access openings of the front and/or rear bumper. Appendix 1 of the Front Axle & Suspension chapter contains additional information about towing procedure.

Fluids & Filters

Fluids & Filters				
Fluid	Type	Capacity	Filter	Comments
Engine Oil	Caterpillar DEO	Initial: 22 Quarts (21 Liters) Refill: 19 Quarts (18 Liters)		*SAE 10W-30 viscosity when ambient temperature is above 0° F (-18° C) and below 104° F (40° C). See Engine Oil Viscosity chart, below, for other temperature ranges.*
Engine Coolant	Caterpillar ELC	7 ½ Gallons (excluding heater system)	Wix 24070	*Requires addition of ELC Externder after first half (3 year / 300,000 midles) of the coolant's lifespan. See Cooling chapter for details.*
Transmission Fluid	Transynd™	7.4 Quarts (7 liters)	BB 0033381	*Transmission refill capacity is substantially less than the initial fill because some fluid remains in the transmission cavities after draining.*
Rear Axle Oil	Hypoid Gear Oil	35 pints (16.9 liters)		*See Rear Axle Viscosity Chart for appropriate*
Front Axle Grease	Chevron Dura Lith Grease EP NLGI 2			
Front Axle Oil	Chevron RPM Synthetic Transmission Fluid SAE 50			*If equipped with optional front oil lubricated bearings.*
Brake Fluid	DOT 3		BB 0067254	*DOT 3 and DOT 5 must not be mixed. If brake system becomes contaminated with DOT 5, the system must be flushed, and major components may require replacement.*
Brake Interlock	DOT 5		BB 1940881	*On units with hydraulic brakes and brake interlock feature**
Hydraulic Steering	Dexron III™	2 Quarts (approximate)		
AD-9 Air Dryer Element			BB 0020138	*On units with air brakes.*
AD-IP Air Dryer Element			BB 0066221	*On units with air brakes.*
Fuel Filter / Water Separator			BB 1967009	
Windshield Washer Fluid		1.05 Gallons		

Engine Oil Viscosity		
Viscosity Grade	Minimum Ambient Temperature	MaximumAmbient Temperature
SAE 0W-20	-40° F (-40° C)	50° F (10° C)
SAE 0W-30	-40° F (-40° C)	86° F (30° C)
SAE 0W-40	-40° F (-40° C)	104° F (40° C)
SAE 5W-30	-22° F (-30° C)	86° F (30° C)
SAE 5W-40	-22° F (-30° C)	122° F (50° C)
SAE 10W-30	0° F (-18° C)	104° F (40° C)
SAE 10W-40	-0° F (-18° C)	122° F (50° C)
SAE 15W-40	15° F (-9.5° C)	122° F (50° C)

General Maintenance Schedules

The following charts list maintenance procedures which should be performed with regularity to maintain the Blue Bird Vision. For convenience, some of these tables are also provided in their respective areas throughout the manual.

About Service Intervals

The charts show recommended minimum service intervals. More frequent service intervals should be considered if the vehicle is operated in extreme conditions such as high humidity and/or dusty environments.Time intervals are shown in terms of months or mileage. The correct interval will be whichever is the first to occur. Some of the components used in the Blue Bird Vision require inspection and/or servicing at intervals specified by their respective manufacturers. Because the interval criteria differs among various component or system manufacturers, compiling an all-inclusive table of regularly scheduled service for the whole bus is impractical. Therefore, separate maintenance tables are provided for various systems or major components.

Some components should be regularly inspected, but do not lend themselves to universal intervals, because their normal service life is highly dependent upon local conditions. For these components, any estimated interval would result in overservicing in some locales and underservicing in others. Such intervals are left to the judgement of the local technican, and the service interval indicated is *As Required*. It is important to understand that this designation should not be taken as an optional inspection. Every item in the following tables should be considered mandatory, and an As Required interval should be viewed as emphasizing the importance of the local service operation first determining, and then strictly adhering to, an appropriate interval. Regardless of the interval determined appropriate, the operation must not be overlooked.

Vendor-Supplied Maintenance Guidelines

The technician should bear in mind that many of the components which are installed on the Vision by Blue Bird, are neither manufactured nor serviced by Blue Bird. Service and Maintenance information more detailed than that presented in this manual may be available from the component manufacturer or may be included in the chapter appendixes. Wherever practical and available, component-specific material from our vendors has been included on the CD which accompanies this manual, and references to those documents are given in the maintenance charts.

Please be aware that these supplemental documents are provided as a courtesy, and are reproduced in their entirity. Therefore, they may include information pertaining to additional component models offered by the vendor, but not actually installed on the Vision. Always be certain that you are using those portions of these documents which correctly pertain to the specific component model installed. Also note that some of the manufacturer-supplied component manuals may contain rebuild procedures. As a general rule, Blue Bird does not recommend rebuilding of components, especially in safety-critical sytems such as air or hydraulic control valves; but strongly recommends replacement over rebuild in the case of failure or defect.

Body Components

Interval: Months/1000 Miles
whichever occurs first

Operation	1 / 3,000	3 / 5,000	3 / 24,000	6 / 6,000	6 / 10,000	12 / 12,000	12 / 24,000	24 / 24,000	Notes
Outward Opening Door									
Adjust door linkage	as required								*Adjust linkage for proper door operation.*
Jackknife Door									
Adjust door control rod				•					
Adjust roller bracket	•								*Adjust for ease of operation*
Adjust control rod bracket	•								*Adjust to prevent pivot pin from binding.*
Lubricate hinge pins	•								*Use LPS number 1.™*
Power Jackknife Door									
Lubricate hinge pins	•								*Use LPS number 1.™*
Adjust pneumatic pressure	•								*Refer to Service Manual, Doors section.*
Adjust switch	•								*Refer to Service Manual, Doors section.*
Windows									
Lubricate latches and slides	•								*Use silicone lubricant.*
Pneumatic Stop Arm									
Adjust	as required								*Adjust for full deployment and retraction.*
Electric Stop Arm									
Lubricate	•								*Lubricate 4-point pivot with Try-Flow.™*
Tighten fasteners	•								*Check interior and exterior fasteners for loosening.*
Vandal Locks									
Lubricate entrance door lock				•					*Use Apply.™*
Lubricate key lock		•							*Use Apply.™*
Lubricate sliding bolt lock		•							*Use LPS number 1.™*
Exterior Body									
Wash exterior	as required to prevent oxidation								
Emergency Exits									
Lubricate roof hatch	•								*Use silicone lubricant.*
Lubricate door hinges				•					*Use LPS number 1.™*
Lubricate hold-open hinges	•								*Apply ASTM D4950 GC-LB Grade 2.*
Emergency Equipment Brackets									
Inspect, tighten mountings	•								*Ensure all fasteners and brackets are secure.*
Heaters & Defrosters									
Check interior hose connections						•			*Inspect for leaks and deterioration.*
Check filters and cores						•			*Clean dust from cores and replace filters.*
Check fasteners						•			*Inspect for loosening and tighten as necessary.*

Chassis Components

Interval: Months/1000 Miles
whichever occurs first

Operation	1 / 3,000	3 / 5,000	3 / 24,000	6 / 6,000	6 / 10,000	12 / 12,000	12 / 24,000	24 / 24,000	Notes
Charging System									
Check battery electrolyte level	•								*Replenish with distilled water*
Inspect battery posts				•					*Clean as often as necessary. Apply corrosion retarder.*
Inspect alternator				•					*Inspect for loose wires, cracked or missing insulator boots, etc.*
Exhaust System									
Inspect piping & joints				•					*Check for loose clamps, leaks, damage. Repair immediately.*
Fuel System									
Check water separator	Check daily								*Check for water contamination.*
Change primary filter					•				*Dump water from separator reservoir.*
Change secondary filter					•				
Inspect, clean fuel inlet screen					•				*Replace if damaged*
Drain fuel tank sediment						•			
Driveline									
Inspect driveline		•							*See Service Manual for details.*
Check torque on capscrews		•							
Steering									
Check fluid level	Check daily								*Frequent low levels indicate repair is needed.*
Lubricate steering column					•				*Follow Hendrickson recommendations.*
Lube intermediate steering shaft					•				
Lubricate king pins					•				
Lubricate tie rod ends					•				
Lubricate drag link					•				
Lubricate slack adjuster					•				
Lubricate cam brake housing					•				
Lubricate steering gear					•				*Use NLGI Number 2 EP or grease rated GC-LB. Use hand-operated grease gun only.*
Change reservoir fluid & filter						•			*More frequently in severe operating conditions.*
Inspect hydraulic pump						•			*If leaks are indicated, repair immediately.*
Inspect steering gear						•			
Air Intake System	**Also See Maintenanace Chart in Intake& Exhaust chapter for more detail**								
Check air restriction indicator	Check daily								*Replace filter element if indicator is red (25 inches H_2O).*
Inspect intake duct & elbow		•							
Tighten clamps & fasteners		•							*See Intake System Chapter for appropriate torque values.*
Inspect support bracket		•							
Inspect charged air cooler		•							
Inspect air cleaner element		•							*Check that element is properly seated and cover is secure.*
Replace air cleaner element						•			*More frequently, if indicated by operating conditions.*

Brakes

Interval: Months/1000 Miles
whichever occurs first

Operation	1/3,000	3/5,000	3/24,000	6/6,000	6/10,000	12/12,000	12/24,000	24/24,000	Notes
Air Brakes									
Replace compressor filters				•					
Clean governor				•					
Inspect air dryer			•						*See Bendix® AD-IP Handbook.*
Drain air tanks	daily in cold weather; weekly in warm weather								*Drain condensation.*
Check, clean pop-off valves							•		*See the appropriate Bendix® publications for details.*
Inspect check valves				•					
Clean, lube treadle valve				•					
Clean relay valves								•	
Clean spring brake valve								•	
Clean parking brake valve								•	
Clean quick-release valve								•	
Inspect brake chambers	•								
Air Brake Wheel Ends									
Inspect, adjust shoes	weekly or as needed in severe applications								*Refer to Meritor™* Maintenance Manual 4
Lubricate S-Cam		•							
Lubricate slack adjusters		•							
Inspect linings & fittings	•								
Hydraulic Brakes									
Check fluid level	•								*Use DOT-3 brake fluid.*
Inspect booster & master cylinder			•						*Inspect for signs of leakage or damage.*
Adjust park brake lever				•					*Adjust engagement pressure at the lever to 90-100 lbs.*
Hydraulic Brake Wheel Ends									
Inspect calipers				•					*Inspect for signs of leakage or damage.*
Lubricate calipers		•							*See Meritor documentation.*
Check pad thickness	weekly or as needed in severe applications								*Minimum 1/8 inch (3.175 mm).*

Front Axle & Suspension

OPERATION	INTERVAL: MONTHS/MILES whichever occurs first: first 1000 miles	6 / 6,000	12 / 12,000	NOTES
Spring Suspension				
Inspect visually		•		*Check for visual damage. See Hendrickson publication 17730-248.*
Check U-bolt torque	•		•	*Tighten to 285–305 ft. lbs (32–34 Nm).*
Lubricate steering grease fittings		•		*Use NLGI #2 EP or equivalent.*
Inspect spring pin lock bolts			•	*Tighten to 380–420 ft. lbs. (515–569 Nm).*
Inspect shackle bracket pivot bolt			•	*Tighten to 380–420 ft. lbs. (515–569 Nm).*
Inspect shocks			•	*Check for signs of leaks, wear, or damage.*
Torque shock mounting bolts			•	*TIghten to 215 ft. lbs. (25 Nm).*
Air Suspension				
Inspect visually		•		*Check for wear, damage, misalignment. See Hendrickson publication 17730-248.*
Check axle to suspension fasteners	•		•	*Tighten to 285–305 ft. lbs (32–34 Nm).*
Lubricate steering grease fittings		•		*Use NLGI #2 EP or equivalent. Lube with suspension loaded.*
Inspect pin lock bolts			•	*Tighten to 380–420 ft. lbs. (515–569 Nm).*
Inspect shackle bracket pivot bolt			•	*Tighten to 380–420 ft. lbs. (515–569 Nm).*
Torque shock mounting bolts			•	*TIghten to 215 ft. lbs. (25 Nm).*
Inspect air spring cushions		•		*Check for wear, abrasions, cuts, or other damage*
Check air spring fasteners			•	
Inspect shocks			•	*Check for signs of leaks, wear, or damage.*
Check suspension height		•		*Shock length, eye to eye: 18.5" ± .25". (470 ± 6mm).*
Check ride height control valve bolts		•		*TIghten to 8–10 ft. lbs. (11–14 Nm).*

Rear Axle & Suspension

OPERATION	INTERVAL: MONTHS/1000 MILES whichever occurs first first 1000 miles	1 / 10,000	6 / 6,000	6 / 10,000	12 / 12,000	12 / 24,000	12 / 50,000	12 / 100,000	NOTES
Rear Axle									
Check lubricant		•							*Hypoid Gear Oil. Capacity: 35 pints (16.9 litres). For viscosity recomendation, see Axle Lubricant chart, below.*
Change Lubricant, Petroleum Based						•	•		
Change Lubricant Synthetic								•	
Spring Suspension									
Inspect visually			•						
Check rebound pins					•				*Verify that cotter pins are installed.*
Torque spring radius fasteners					•				*TIghten locknuts to 100–125 ft. lbs. (11–14 Nm).*
Torque shock mounting bolts					•				*Tighten locknuts to 75–100 ft. lbs. (9-11 Nm).*
Torque U-bolt fasteners					•				*Torque U-bolts to 300–350 ft. lbs. (34–39 Nm).*
Air Suspension									
Inspect visually			•						*Check for wear, damage; loose or missing parts.*
Torque upper shock mount				•					*Tighten to 50–70 ft. lbs. (68–95 Nm)*
Torque lower shock mount				•					*Tighten to 150–180 ft. lbs. (203–244 Nm)*
Check ride height	•		•						*Shock length, eye to eye: 22.68" ± .25". (576 ± 6 mm)*
Check U-bolts 7/8-14 UNF 28	•			•					*Tighten to 400–450 ft. lbs. (542–610 Nm)*
Check U-bolts 3/4-16 UNF 28	•			•					*Tighten to 260–320 ft. lbs. (353–434 Nm)*
Torque lower shock mount to spring				•					*Tighten to 260–320 ft. lbs. (353–434 Nm)*
Torque air spring anchor bolts				•					*Tighten to 20–30 ft. lbs. (27–41 Nm)*
Torque quick align bolts				•					*Tighten to 525–575 ft. lbs. (712–800 Nm)*
Torque lever linkage locknut				•					*Tighten to 100–150 in. lbs. (11–17 Nm)*
Torque Leveling valve mount bolt				•					*Tighten to 60–85 in. lbs. (7–10 Nm)*

Rear Axle Viscosity /Temperature Chart

Meritor Lubricant Specification	Description	Cross Reference	Minimum Outside Temperature	Maximum Outside Temperature
0-76-A	Hypoid Gear Oil	GL-5, S.A.E. 85W/140	+10° F (-12.2° C)	*
0-76-B	Hypoid Gear Oil	GL-5, S.A.E. 80W/140	-15° F (-26.1° C)	*
0-76-D	Hypoid Gear Oil	GL-5, S.A.E. 80W/90	-15° F (-26.1° C)	*
0-76-E	Hypoid Gear Oil	GL-5, S.A.E. 75W/90	-40° F (-40° C)	*
0-76-J	Hypoid Gear Oil	GL-5, S.A.E. 75W	-40° F (-40° C)	+35° F (+1.6° C)
0-76-L	Hypoid Gear Oil	GL-5, S.A.E. 75W/140	-40° F (-40° C)	*

** No upper limit on these temperatures. However, axle sump temperature must never exceed + 250° F (121° C).*

Cooling System

OPERATION	WHICHEVER OCCURS FIRST: Daily	1 month /250 hours	3 months / 1,000 miles	24 months / 500 hours	36 months / 300,000 miles	72 months / 600,000 miles	NOTES
Coolant							
Check fluid level in reservoir	•						*Also check coolant level whenever engine runs hotter than normal. Repair any leaks immediately. Use only approved coolant. See Caterpillar® Operations and Maintenance Manual SEBU7011-11 or LEBT2835, as appropriate.*
Clean debris from radiator fins.	•						
Inspect for leaks.	•						
Add coolant	as required						
Add extender					•		*Use only approved coolant. See Caterpillar publications referenced above.*
Change coolant						•	*Use Caterpillar ELC or equivalent. See Caterpillar publications referenced above.*
Belts							
Inspect tension & condition		•					
Hoses & Clamps							
Inspect for leaks or deterioration		•					
Tighten clamps				•			*Torque radiator hoses to 90 in. lbs (10 Nm) and heater hose clamps to 45 in. lbs. (5 Nm).*

Engine & Transmission

INTERVAL: MONTHS/1000 MILES

whichever occurs first

OPERATION	1 / 3,000	3 / 5,000	3 / 24,000	6 / 6,000	6 / 11,000	12 / 12,000	12 / 24,000	24 / 24,000	NOTES
Engine									
Check engine oil	Check daily								*See Caterpillar C7 Operator's Manual for oil specifications*
Change Oil & Filter					•				*Replenish with distilled water*
Perform Oil Sample Analysis					•				*Per Caterpillar specifications*
Inspect & Adjust Valve Lash					•				
Close Inspection Belt & Tensioner					•				
Clean Crankcase Breather					•				
Transmission									
Check fluid level	Check daily, following Allision recommendations								*Use Transynd™ fluid.*
Change main filter								•	*Inspect for signs of leakage or damage.*
Change sump filter							•		*Change after first 5000 mi (8000 km) & at interval thereafter.*
Inspect vent							•		
Inspect shift cable							•		
Adjust shift cable	as required								*See Service Manual for details.*